IN THE CLAIMS:

1. (Previously Presented) A plasma processing apparatus comprising:

a first electrode;

a substrate configured to be subjected to a plasma, the substrate being positioned on the first electrode;

a magnetic field generator configured to apply a static magnetic field to a surface of the substrate to which the plasma process is applied; and

an auxiliary electrode provided on an outer periphery of said first electrode to excite plasma in a vicinity of the auxiliary electrode,

wherein electrons in the plasma drift from a front surface of said auxiliary electrode to a back surface thereof and from the back surface of said auxiliary electrode to the front surface thereof.

2. (Previously Presented) The plasma processing apparatus as claimed in claim 1, wherein the front surface of said auxiliary electrode is covered by an insulating material.

3. (Previously Presented) The plasma processing apparatus as claimed in claim 1 or 2, wherein the substrate has a surface positioned at a level substantially equal to a level of the front surface of said auxiliary electrode.

4. (Previously Presented) The plasma processing apparatus as claimed in claim 1 or 2, wherein said magnetic field generator comprises a dipole ring-magnet.

5. (Currently Amended) The plasma processing apparatus as claimed in claim 1 or 2, wherein said first electrode is supplied with a first radio frequency and said auxiliary electrode is supplied with a second radio frequency and wherein the first and the second radio frequencies are equal to each other and have different phases thereof ~~are different from each other~~.

6. (Previously Presented) The plasma processing apparatus as claimed in claim 1 or 2, wherein said first electrode is supplied with a first radio frequency and said auxiliary electrode is supplied with a second radio frequency and wherein said second radio frequency is higher than said first radio frequency.

7. (Currently Amended) A plasma processing method performed in a plasma processing apparatus comprising a first electrode on which a substrate ~~on which a substrate~~ is positioned and an auxiliary electrode provided on an outer periphery of said first electrode, the method comprising:

subjecting the substrate to a plasma process containing a plasma;

applying a static magnetic field to a surface of the substrate to which the plasma process is applied;

exciting plasma on at least a back surface of the auxiliary electrode; and

causing electrons in the plasma to drift from a front surface of said auxiliary electrode to the back surface thereof and from the back surface of said auxiliary electrode to the front surface thereof.

8. (Previously Presented) A plasma processing apparatus comprising:

a first electrode;

a substrate configured to be subjected to a plasma, the substrate being positioned on the first electrode;

a magnetic field generator configured to apply a static magnetic field to a surface of the substrate to which the plasma process is applied; and

an auxiliary electrode provided on an outer periphery of said first electrode to excite plasma in a vicinity of the auxiliary electrode, the front surface of said auxiliary electrode being covered by an insulating material,

wherein electrons in the plasma drift from a front surface of said auxiliary electrode to a back surface thereof and from the back surface of said auxiliary electrode to the front surface thereof.